ART 34 AMDT

CLAIMS

What I claim is:

1. A non-replicating vector, comprising:

a nucleotide sequence encoding a region which is at least one of the conserved domains 2, 3 and 5 of a major outer membrane protein of a strain of *Chlamydia*, and

a promoter sequence operatively coupled to said nucleotide sequence for expression of said at least one conserved domain in a host.

2. The vector of claim 1 wherein said nucleotide sequence encoding the conserved domain 2 and/or 3 further includes a nucleotide sequence encoding a variable domain of the major outer membrane protein immediately downstream of the conserved domain.

3. The vector of claim 1 wherein said nucleotide sequence encodes the conserved domain 5 of the outer membrane protein.

4. The vector of claim 1 wherein said promoter sequence is the cytomegalovirus promoter.

5. The vector of claim 1 wherein said non-replicating vector comprises plasmid pcDNA3 containing said promoter sequence and into wherein said nucleotide sequence is inserted in operative position to said promoter sequence.

6. The vector of claim 5 wherein said strain of *Chlamydia* is a strain producing chlamydial infectious of the lung.

7. The vector of claim 5 wherein said strain of *Chlamydia* is a strain of *Chlamydia trachomatis*.

8. An immunogenic composition for *in vivo* administration to a host for the generation in the host of a protective immune response to a fragment of a major outer membrane protein (MOMP) of a strain of *Chlamydia*, comprising a non-replicating vector comprising:

a nucleotide sequence encoding a region which is at least one of the conserved domains 2, 3 and 5 of a major

outer membrane protein of a strain of *Chlamydia* and that generates a MOMP-specific immune response, and

a promoter sequence operatively coupled to said nucleotide sequence for expression of said MOMP or MOMP fragment in the host; and

a pharmaceutically-acceptable carrier therefor.

9. The immunogenic composition of claim 8 wherein said nucleotide sequence encoding the conserved domain 2 and/or 3 further includes a nucleotide sequence encoding a variable domain of the major outer membrane protein immediately downstream of said conserved domain.

10. The immunogenic composition of claim 8 wherein said nucleotide sequence encodes the conserved domain 5 of a major outer membrane protein of a strain of *Chlamydia*.

11. The immunogenic composition of claim 8 wherein said promoter sequence is the cytomegalovirus promoter.

12. The immunogenic composition of claim 1 wherein said strain of *Chlamydia* is a strain producing chlamydial infections of the lung.

13. The immunogenic of claim 8 wherein said strain of *Chlamydia* is a strain of *Chlamydia trachomatis*.

14. The immunogenic composition of claim 13 wherein said non-replicating vector comprises plasmid pcDNA3 containing said promoter sequence and into which said nucleotide sequence is inserted in operative relation to said promoter sequence.

15. The composition of claim 8 wherein said immune response is predominantly a cellular immune response.

16. A method of immunizing a host against disease caused by infection with a strain of *Chlamydia*, which comprises administering to said host an effective amount of a non-replicating vector comprising:

a nucleotide sequence encoding a region which is at least one of the conserved domains 2, 3 and 5 of a major

outer membrane protein of a strain of *Chlamydia* and that generates a MOMP-specific immune response, and

a promoter sequence operatively coupled to said nucleotide sequence for expression of said MOMP in the host.

17. The method of claim 16 wherein said promoter sequence is the cytomegalovirus promoter.

18. The method of claim 16 wherein said strain of *Chlamydia* is a strain producing chlamydial infections of the lung.

19. The method of claim 16 wherein said strain of *Chlamydia* is a strain of *Chlamydia trachomatis*.

20. The method of claim 16 wherein said non-replicating vector comprises plasmid pcDNA3 containing said promoter into which said nucleotide sequence is inserted in operative relation to said promoter sequence.

21. The method of claim 16 wherein said immune response is predominantly a cellular immune response.

22. The method of claim 16 wherein said non-replicating vector is administered intranasally.

23. The method of claim 16 wherein said host is a human host.

24. A method of using a nucleotide sequence encoding a fragment of a major outer membrane protein (MOMP) of a strain of *Chlamydia* that generates a MOMP-specific immune response, to produce an immune response in a host, which comprises:

isolating said nucleotide sequence encoding a region which is at least one of the conserved domains 2, 3 and 5 of a major outer membrane protein of a strain of *Chlamydia*,

operatively linking said nucleotide sequence to at least one control sequence to produce a non-replicating vector, said control sequence directing expression of said

MOMP fragment when introduced into a host to produce an immune response to said MOMP fragment, and

introducing said vector into a host.

25. The method of claim 24 wherein said nucleotide sequence encoding the conserved domain 2 and/or 3 further includes a nucleotide sequence encoding a variable domain of the major outer membrane protein immediately downstream of said conserved domain.

26. The method of claim 24 wherein said nucleotide sequence encodes the conserved domain 5 of a major outer membrane protein of a strain of *Chlamydia*.

27. The method of claim 24 wherein said control sequence is the cytomegalovirus promoter.

28. The method of claim 24 wherein said strain of *Chlamydia* is a strain producing chlamydial infections of the lung.

29. The method of claim 24 wherein said strain of *Chlamydia* is a strain of *Chlamydia trachomatis*.

30. The method of claim 24 wherein said non-replicating vector comprises plasmid pcDNA3 containing said control sequence into which said gene encoding MOMP is inserted in operative relation to said control sequence.

31. The method of claim 24 wherein said immune response is predominantly a cellular immune response.

32. The method of claim 24 wherein said vector is introduced into said host intranasally.

33. The method of claim 24 wherein said host is a human host.

34. A method of producing a vaccine for protection of a host against disease caused by infection with a strain of *Chlamydia*, which comprises:

isolating a nucleotide sequence encoding a a region which is at least one of the conserved domains 2, 3 and 5 of a major outer membrane protein of a strain of *Chlamydia* and that generates a MOMP-specific immune response,

operatively linking said nucleotide sequence to at least one control sequence to produce a non-replicating vector, the control sequence directing expression of said MOMP fragment when introduced to a host to produce an immune response to said MOMP fragment, and

formulating said vector as a vaccine for *in vivo* administration to a host.

35. A vaccine produced by the method of claim 34.